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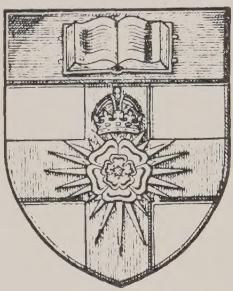

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GENERAL INDEX

TO

VOLUMES XXX TO LII

OF THE

MONTHLY NOTICES

OF THE

ROYAL ASTRONOMICAL SOCIETY

1869—1892

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PREFACE

THE General Index to the *Monthly Notices* vols. 1 to 29 was compiled by the late Assistant Secretary, Mr. J. Williams, and was published in 1870. By 1890, twenty more volumes of the *Monthly Notices* had appeared, and it became necessary to consider the propriety of preparing either a new index to the whole series, or a continuation of the existing one. As a large number of copies of the previous index remained in stock, the former course appeared a needless expense, and in May 1890 the Council decided upon a General Index to vols. 30 to 50 ; and the present Assistant Secretary, Mr. W. H. Wesley, was instructed to prepare it. The numerous demands upon his time rendered the progress of this work very slow ; and it was not completed till 1893. By that time further volumes of the *Monthly Notices* had been published, and the Council decided to include volumes 51 and 52 in the Index. The incorporation of these in an index already written caused further delay, and it was not till last year that the work was ready for press, and much time has since been required for revision of proof sheets.

The present Index, though including six fewer volumes than the previous one, forms a work of about the same size. Recent volumes of the *Monthly Notices* have naturally been much larger than the early ones and contain more papers. The only difference of a general character between the two indexes consists in the substitution of Clarendon type for the catch-words in place of the small capitals employed in the first index. It is hoped that greater facility is thus obtained for picking up the catch-word required.

With regard to the arrangement of the index, the numerous questions of detail which naturally arise in such work had been practically settled by Mr. Wesley in the preparation of the copy for press. A critical examination of the proof sheets and revises

was made independently by each of the present Secretaries (in addition to the complete examination in the ordinary course by Mr. Wesley himself), with the satisfactory result that they found themselves unable to suggest any improvements in the arrangements adopted. These arrangements were brought clearly before the Secretaries through the inevitable accidental errors, the setting right of which often required a reference to Mr. Wesley for his guiding principle. Notes were kept of these points, and it has been thought desirable to permanently record here the more important of them, for reference on future occasions.

Author Entries:—The following arrangement has been adopted.

(1) Election as Fellow or Associate.

(2) Papers in order of volume and page.

(3) Report of his Observatory.

(4) Death and Obituary Notice.

In (2) are included Presidential addresses by the Author on presenting the Gold Medal, or by the President on presenting the Medal to the Author, in their order of volume and page as among the papers. Also papers by others in reply to or in reference to a paper by the Author. There are some exceptions to the strict rule of order by volume and page. Thus a series of papers with the same title are run on in one heading (under the order of the first of the series). Also, if one paper refers directly to another, it is placed immediately below it, with a double dash. Mr. Marth's long series of Ephemerides have been placed together at the end of the entry under his name.

Professional titles of authors are omitted except in the catch-lines, where the names are given more fully—the christian name if there is but *one*, and initials, if more than one. In the case of change of name, both names are given (one in brackets). Full titles of papers are given under author entries, *the spelling of the original being adhered to.*

Subject Entries:—The object kept in view was to enable a paper on any subject to be readily found. To avoid defeating this object by multiplying unimportant entries, no attempt has been made to index minutely every part of the subjects treated of in a paper, or every name mentioned. Papers are indexed under what appeared their main subject or subjects *without regard to the exact words of their titles.* As a rule the subject entry for each paper is given *in one place only*, but repetition has in some cases been found necessary.

A simple chronological arrangement has not been possible in

some of the longer subject entries. The heading of **Comets** (which has been kindly revised by Mr. Crommelin) extends over nine pages. The separate Comets are arranged in order of year and number, and under each separate Comet the titles are arranged as follows :

(1) Discovery.
(2) Elements and Ephemeris.
(3) Observations for position.
(4) Spectroscopic Observations.
(5) Drawings, &c.

In the case of Comets *to which there is no other reference* the Council note is indexed in order to make the list of Comets complete.

Papers relating to *Comets generally*, or to individual Comets but not to any special apparition, are arranged in order of publication at the end of the entry.

Council notes on the Comets of each year are given together at the commencement of the heading, and not repeated under each Comet unless there is no other reference to it.

Minor Planets :—(It will be noticed that under **Asteroids** a cross reference is given to Minor Planets.) These are indexed in the order of their number, not the alphabetical order of their name. Since both name and number are usually given, it did not seem necessary to compile an alphabetical list of the names for ascertaining quickly the number for any given name.

Photographs of planets, comets, nebulæ, &c., are treated as other observations and indexed under the subject photographed. The heading **Photography** has been reserved for papers of a more or less general character.

In titles of subject headings generally substantives have been preferred to adjectives ; thus *Moon, theory of*, instead of *Lunar Theory* ; *Sun, Eclipses of, Spectrum of*, &c., rather than *Solar Eclipses, Spectrum, &c.* It was not thought well, however, to make a rigid rule, so *Lunar Distances, Solar System*, &c. have been retained as subject headings. *Planetary Orbit, Theory*, &c., are also given, as the use of the adjective did not remove the entries from that of *Planet*, which they immediately follow. **Star Catalogues** are given together, and cross references made from headings of special catalogues, as in this and other cases repetition would have unduly increased the size of the Index.

Some difficulty was felt in indexing the numerous papers on **Transits of Venus and Mercury**, &c., but it was ultimately decided to place them all under **Sun, Parallax of**, as thus all papers on

solar parallax determinations, whether from transits of interior or oppositions of exterior planets, were brought together. In this case again the great length of the heading rendered repetition unadvisable.

The discussion relating to Mr. Stone's papers on the Unit of Mean Time covered so wide a field that it was impossible to include them all under one heading. For the most part they are given under **Time, Unit of Mean Solar**, with cross reference to **Hansen's Tables**. It was found necessary to repeat some of these titles under **Moon, theory of**.

At the request of the Secretaries, Mr. A. C. D. Crommelin has kindly drawn up a list of Comets observed during the period covered by the Index, with dates, discoverers, &c., which is printed as an appendix, and will, doubtless, be found of great value for reference.

E. W. MAUNDER
H. H. TURNER } *Secretaries.*

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APPENDIX

LIST OF COMETS OBSERVED DURING THE PERIOD COVERED BY THE PRESENT INDEX. PREPARED BY A. C. D. CROMMELIN

Provisional Designation	Permanent Number	First seen	Perihelion Passage	Discoverer	Name	Period
						Y.
1869 *a*	I.	1869 April 9	1869 June 30	Winnecke	Winnecke	5·82
„ *b*	II.	„ Oct. 11	„ Oct. 9	Tempel		
„ *c*	III.	„ Nov. 27	„ Nov. 18	Tempel	Tempel-Swift	5·48
1870 *a*	I.	1870 May 29	1870 July 14	Winnecke		
„ *b*	II.	„ Aug. 28	„ Sept. 2	Coggia		
„ *c*	III.	„ Aug. 31	„ Sept. 22	Winnecke	d'Arrest	6·69
„ *d*	IV.	„ Nov. 23	„ Dec. 19	Winnecke		
1871 *a*	I.	1871 April 7	1871 June 10	Winnecke		5,178
„ *b*	II.	„ June 14	„ July 27	Tempel		
„ *c*	V.	„ Sept. 19	„ Dec. 28	Winnecke	Encke	3·30
„ *d*	III.	„ Oct. 12	„ Dec. 1	Borelly	Tuttle	13·76
„ *e*	IV.	„ Nov. 3	„ Dec. 20	Tempel		2,691
1872 *a*		1872 Dec. 2		Pogson		
1873 *a*	I.	1873 April 3	1873 May 9	Stephan	Tempel_1	5·97
„ *b*	II.	„ July 3	„ June 25	Tempel	Tempel_2	5·21
„ *c*	IV.	„ Aug. 20	„ Sept. 10	Borelly		3,375
„ *d*	V.	„ Aug. 23	„ Oct. 1	Henry		
„ *e*	VI.	„ Aug. 31	„ Oct. 10	Stephan	Brorsen	5·46
„ *f*	III.	„ Sept. 3	„ July 18	Stephan	Faye	7·51
„ *g*	VII.	„ Nov. 10	„ Dec. 3	Coggia		6·2 (?)
1874 *a*	I.	1874 Feb. 20	1874 Mar. 9	Winnecke		
„ *b*	II.	„ April 11	„ Mar. 13	Winnecke		
„ *c*	III.	„ April 17	„ July 8	Coggia		5,711
„ *d*	V.	„ July 25	„ Aug. 26	Borelly		
„ *e*	IV.	„ Aug. 19	„ July 17	Coggia		306
„ *f*	VI.	„ Dec. 6	„ Oct. 18	Borelly		
1875 *a*	I.	1875 Jan. 26	1875 April 13	Holden	Encke	3·30
„ *b*	II.	„ Feb. 1	„ Mar. 12	Borelly	Winnecke	5·82
1877 *a*	I.	1877 Feb. 8	1877 Jan. 19	Borelly		
„ *b*	II.	„ April 5	„ April 17	Winnecke		8,000
„ *c*	III.	„ April 11	„ April 26	Swift		
„ *d*	IV.	„ July 9	„ May 10	Tempel, Coggia	d'Arrest	6·69

Provisional Designation	Permanent Number	First seen	Perihelion Passage	Discoverer	Name	Period
						Y.
1877 *e*	VI.	1877 Sept. 13	1877 Sept. 11	Coggia		
„ *f*	V.	„ Oct. 2	„ June 27	Tempel		
1878 *a*	I.	1878 July 7	1878 July 20	Swift		
„ *b*	III.	„ July 19	„ Sept. 7	Tempel	$Tempel_2$	5·21
„ *c*	II.	„ Aug. 5	„ July 26	Tebbutt	Encke	3·30
1879 *a*	I.	1879 Jan. 14	1879 Mar. 30	Tempel	Brorsen	5·46
„ *b*	III.	„ April 24	„ May 7	Tempel	$Tempel_1$	5·97
„ *c*	II.	„ June 16	„ April 27	Swift		
„ *d*	V.	„ Aug. 21	„ Oct. 4	Palisa		
„ *e*	IV.	„ Aug. 24	„ Aug. 29	Hartwig		
1880 *a*	I.	1880 Feb. 3	1880 Jan. 27	Tebbutt		
„ *b*	II.	„ April 6	„ July 1	Schaeberle		
„ *c*	I.	„ Aug. 25	1881 Jan. 22	Tempel	Faye	7·51
„ *d*	III.	„ Sep. 29	1880 Sept. 6	Hartwig		1,280
„ *e*	IV.	„ Oct. 10	„ Nov. 8	Swift	Tempel-Swift	5·48
„ *f*	V.	„ Dec. 16	„ Nov. 9	Pechüle		
„	—	„ Dec. 21	„ Nov. 8	Cooper		
1881 *a*	II.	1881 April 30	1881 May 20	Swift		
—	—	„ May 12		Barnard		
„ *b*	III.	„ May 22	„ June 16	Tebbutt		2,954
„ *c*	IV.	„ July 14	„ Aug. 22	Schaeberle		
„ *d*	VII.	„ Aug. 20	„ Nov. 15	Hartwig	Encke	3·30
„ *e*	VI.	„ Sept. 17	„ Sept. 14	Barnard		
„ *f*	V.	„ Oct. 4	„ Sept. 13	Denning	$Denning_1$	8·69
„ *g*	VIII.	„ Nov. 16	„ Nov. 19	Swift		793
1882 *a*	I.	1882 Mar. 17	1882 June 10	Wells		
—	—	„ May 16				
„ *b*	II.	„ Sept. 3	„ Sept. 17	Auckland		772
„ *c*	III.	„ Sept. 13	„ Nov. 12	Barnard		
—	—	„ Oct. 9	„ Sept. 24	Schmidt	Companion to *b*	
1883 *a*	I.	1883 Feb. 23	1883 Feb. 18	Swift, Brooks		
„ *b*	I.	„ Sept. 1	1884 Jan. 25	Brooks	Pons-Brooks	71·48
„ *c*	—	„ Dec. 25		Shortt		
1884 *a*	II.	1884 Jan. 7	1883 Dec. 25	Ross		
„ *b*	II.	„ July 16	1884 Aug. 16	Barnard	$Barnard_1$	5·40
„ *c*	III.	„ Sept. 17	„ Nov. 17	Wolf	Wolf	6·82
„ *d*	I.	„ Dec. 13	1885 Mar. 7	Tempel	Encke	3·30
1885 *a*	II.	1885 July 7	„ Aug. 7	Barnard		
„ *b*	IV.	„ Aug. 8	„ Sept. 11	Perrotin	Tuttle	13·76
„ *c*	III.	„ Aug. 31	„ Aug. 10	Brooks		496
„ *d*	I.	„ Dec. 1	1886 April 5	Fabry		
„ *e*	II.	„ Dec. 3	„ May 3	Barnard		
„ *f*	V.	„ Dec. 26	1885 Nov. 25	Brooks		
1886 *a*	V.	1886 April 27	1886 June 7	Brooks		
„ *b*	III.	„ April 30	„ May 4	Brooks		
„ *c*	IV.	„ May 22	„ June 6	Brooks	$Brooks_2$	5·60
„ *d*	VI.	„ Aug. 19	„ Sept. 4	Finlay	Winnecke	5·82

Provisional Designation	Permanent Number	First seen	Perihelion Passage	Discoverer	Name	Period
						Y.
1886 *e*	VII.	1866 Sept. 26	1886 Nov. 22	Finlay	Finlay	6·62
„ *f*	IX.	„ Oct. 4	„ Dec. 16	Barnard, Hartwig		
1887 *a*	I.	1887 Jan. 18	1887 Jan. 11	Thome		
„ *b*	II.	„ Jan. 22	„ Mar. 17	Brooks		1,090
„ *c*	VIII.	„ Jan. 23	1886 Nov. 26	Barnard		
„ *d*	III.	„ Feb. 16	1887 Mar. 28	Barnard		
„ *e*	IV.	„ May 12	„ June 16	Barnard		8,298
„ *f*	V.	„ Aug. 24	„ Oct. 8	Brooks	Olbers-Brooks	72·63
1888 *a*	I.	1888 Feb. 18	1888 Mar. 17	Sawerthal		2,183
„ *b*	II.	„ July 8	„ June 28	Tebbutt	Encke	3·30
„ *c*	III.	„ Aug. 7	„ July 31	Brooks		
„ *d*	IV.	„ Aug. 9	„ Aug. 19	Perrotin	Faye	7·51
„ *e*	I.	„ Sept. 2	1889 Jan. 31	Barnard		
„ *f*	V.	„ Oct. 30	1888 Sept. 13	Barnard		
1889 *a*	—	1889 Jan. 14		Brooks		
„ *b*	II.	„ Mar. 31	1889 June 10	Barnard		
„ *c*	III.	„ June 23	„ June 20	Barnard		128
„ *d*	V.	„ July 6	„ Sept. 30	Brooks	$Brooks_2$	7·07
„ *e*	IV.	„ July 19	„ July 19	Davidson		5·127
—	—	„ Aug. 1	„ Oct. 8	Barnard	Companion to *d*	
„ *f*	VI.	„ Nov. 16	„ Nov. 29	Swift	Swift	8·53
„ *g*	I.	„ Dec. 12	1890 Jan. 26	Borelly		
1890 *a*	II.	1890 Mar. 19	„ June 1	Brooks		
„ *b*	III.	„ July 18	„ July 8	Coggia		
„ *c*	VI.	„ July 23	„ Sept. 24	Denning		
„ *d*	V.	„ Oct. 6	„ Sept. 17	Barnard	d'Arrest	6·69
„ *e*	IV.	„ Nov. 15	„ Aug. 7	Zona		
„ *f*	VII.	„ Nov. 16	„ Oct. 26	Spitaler	Spitaler	6·38
1891 *a*	I.	1891 Mar. 29	1891 April 27	Barnard, Denning		
„ *b*	II.	„ May 1	„ Sept. 23	Spitaler	Wolf	6·82
„ *c*	III.	„ Aug. 1	„ Oct. 17	Barnard	Encke	3·30
„ *d*	V.	„ Sept. 27	„ Nov. 14	Barnard	Tempel-Swift	5·48
„ *e*	IV.	„ Oct. 2	„ Nov. 13	Barnard		
1892 *a*	I.	1892 Mar. 6	1892 April 6	Swift		
„ *b*	II.	„ Mar. 18	„ May 11	Denning		
„ *c*	IV.	„ Mar. 18	„ June 30	Spitaler	Winnecke	5·82
„ *d*	VI.	„ Aug. 28	„ Dec. 28	Brooks		
„ *e*	V.	„ Oct. 12	„ Dec. 11	Barnard	$Barnard_2$	6·30
„ *f*	III.	„ Nov. 6	„ June 13	Holmes	Holmes	6·90
„ *g*	I.	„ Nov. 19	1893 Jan. 6	Brooks		
1893 *a*	III.	1893 May 17	„ July 12	Finlay	Finlay	6·62
„ *b*	II.	„ July 8	„ July 7	Rordame, Quénisset		
„ *c*	IV.	„ Oct. 16	„ Sept. 19	Brooks		
1894 *a*	I.	1894 Mar. 26	1894 Feb. 9	Denning	$Denning_2$	7·3
„ *b*	II.	„ April 1	„ April 13	Gale		1,001
„ *c*	III.	„ May 8	„ April 23	Finlay	$Tempel_2$	

NOTES

The designation by letters simply follows the chronological order of discovery in each year; that of Roman numerals follows the chronological order of perihelion passages, the year in which the passage takes place being in all cases understood before the numeral. In a few cases of doubtful discoveries, or comets only seen on one day, letters are not assigned, and such comets would be distinguished simply by the discoverer's name and the date of discovery. Of course observations on three days at least are required for determining the orbit and assigning a Roman numeral.

Encke's Comet was observed in 1786, 1795, 1805, 1818 (when its period was determined), and at every perihelion passage since.

Winnecke's Comet was observed in 1819, 1858, 1869, 1875, 1886, 1892.

Brorsen's Comet was observed in 1846, 1857, 1868, 1873, 1879, but not since the latter year.

Tempel's first periodic Comet was observed in 1867, 1873, 1879.

Comet Tempel-Swift was observed in 1869, 1880, 1891.

d'Arrest's Comet was observed in 1851, 1857, 1870, 1877, 1890.

Faye's Comet was observed in 1843, 1850, 1858, 1866, 1873, 1880, 1888.

Tuttle's Comet was observed in 1790, 1858, 1871, 1885.

Tempel's second periodic Comet was observed in 1873, 1878, 1894.

Pons' Comet was observed in 1812, 1883.

Olbers' Comet was observed in 1815, 1887.

Finlay's Comet was observed in 1886, 1893.

Wolf's Comet was observed in 1884, 1891.

The short period of 1873 VII. is very doubtful; a period of fifty-six years has also been found; it may be identical with 1818 I.

The following comets of short period have been observed as yet at only one apparition: 1881 V. ($Denning_1$); 1884 II. ($Barnard_1$); 1886 IV. ($Brooks_1$); 1889 V. ($Brooks_2$); 1889 VI. (Swift); 1890 VII. (Spitaler); 1892 V. ($Barnard_2$); 1892 III. (Holmes); 1894 I. ($Denning_2$).

1872 *a* was only seen on December 2 and 3. It was thought to be a fragment of Biela's comet, but this is doubtful.

1874 III. is the great comet of 1874.

1878 I. was only observed on four days.

1880 I. is the great southern comet of 1880.

1880 *g*. Seen by no one but Cooper, and considered very doubtful. Some authorities assign a Roman numeral (V.) to it.

1881 I. is the great comet of 1881.

1882, May 16. This is the comet seen in Egypt during a total eclipse of the sun.

1882 II. This is the great comet of 1882. This comet and 1843 I., 1880 I., 1887 I. appear to form a family of comets travelling in nearly identical orbits.

1882, October 9. A companion to 1882 II.

1883, December 25. Only seen two days.

1889 *a*. Only seen one day.

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